CDI14-LR288

STATEMENT OF INTEREST, COMMUNITY DATA INTEGRATION
October 30, 2013

SECTION 1. PROJECT ADMIINISTRATIVE INFORMATION

CDI Science Support Category: Community Innovation (SSF4)
Project Title: *Adopt a Pixel - Data Infrastructure*
Name of lead USGS cost center requesting funding: GHCED0000
Name of USGS Principal Investigator: Ryan Longhenry
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- Jeannie Allen, Sigma Space Corp. for Landsat at NASA Goddard Space Flight Center. E-mail Jeannette.E.Allen@nasa.gov; Ph 240-460-0946 (In-kind contribution)
- Virginia Butcher, Sigma Space Corp. for Landsat at NASA Goddard Space Flight Center. E-mail ginger.butcher@sigmaspace.com; Ph 240-687-3227 (In-kind contribution)
- Rachel Headley, STEM Liaison, Academic Affairs, Black Hills State University. E-mail rachel.headley@bhsu.edu; Ph 605-323-9650 (In-kind contribution)

Short Description: Adopt a Pixel is a ground-reference data acquisition system engaging citizen scientists to serve operational and research needs of the Landsat science community. CDI funding will support the establishment of the data infrastructure within the Operational Science group of the USGS Earth Resources Observation and Science (EROS) Center lead by Dr. David E. Hair.

SECTION 2. PROJECT SUMMARY

Although much of remote sensing is accomplished through air and space borne systems, ground-based observations can also be utilized to detect change, define landscape, and show differing types of land usage. Combining these two collection methods provides scientist with a cost efficient means of ground-truthing without the need to travel.

The Landsat Science Team and associated scientists lack a system for acquiring reliable ground-reference data on a national and international scale for both operational and research science. In a larger context, the United States lacks a central archive of geo-spatially tagged ground photographs to serve as a baseline for science investigations over the long term. Citizen science has matured over the last few years to show great promise to fill these needs, as well as to engage citizens themselves in contributing to and becoming more familiar with the science process as a human endeavor.

The citizen science project, *Adopt a Pixel (AaP)* has grown out of the partnership between USGS and NASA over the decades for Landsat missions 5, 7, and 8, and also out of partnerships specific to this project with the following: U.S. National Park Service (two parks: Bandelier National Monument, and the Lewis and Clark National Historic Trail); 4-H; and the New Mexico Museum of Natural History and Science, with Sandia Mountain Natural History Center.

A pilot was conducted in coordination with all partners in the Spring of 2013 to refine a protocol and incorporate input from Landsat scientists that ensured data are meaningful for science research. The next steps for advancing the AaP project is to provide more robust back and front-end capabilities. These include a project specific user upload portal, a new database to support ingest and querying of data, and the development of a front-end web presence that will be used to describe the project and provide a means for distribution. There are several challenges that come with the creation and support of a ground-based photo archive. First and foremost is participation. This "crowd sourcing" activity will require marketing to both the general public and science community in order to obtain enough imagery to be successful. Secondly, geospatial association will be the key to making this imagery searchable on a web-based interface. Image locations and availability must be queried by the end user in order to cross reference ground photos with available nadir collects. The third challenge is the data management associated with user data uploads. Uploads will need to be scanned for viruses, inventoried, and made available to the public via a geospatial web interface.

It is anticipated that partners on AaP will obtain funding for a three-year project, at the end of which period the program will be fully integrated with Landsat science operations. Citizen science-collected reliable ground reference data will become an integral part of a federal operational science program.

All contractor labor will be vetted through the appropriate COR process upon funding approval.

Section 3. ESTIMATED BUDGET

Budget Category	Federal Funded "Requested"	Matching Funds "Proposed"
1. SALARIES (including benefits)		
Personnel Total:	$ 7,500	$
Contract Personnel Total	$ 28,000	$ 18,000
Total Salaries	$ 35,500	$ 18,000
2. TRAVEL EXPENSES		
Travel Total (Per Diem, Airfare, Mileage/Shuttle) x # of Trips	$ 0	$1,500
Other travel expense (registration fees)	$ 0	
Total Travel Expenses	$ 0	$1,500
3. OTHER DIRECT COSTS: (Itemized)		
Equipment (software, hardware)	$ 7,200	$15,000
Publication costs		
Office supplies, training, other expenses		
Total Other Direct Costs		
Total Direct Costs	$41,700	
Indirect Costs	$8,300	$0
GRAND TOTAL	$50,000	$34,500